

June 26, 1986

G. E. Kamp

Cesium-137 Contamination

In accordance with your request, the Radiological Survey Activities Group did a preliminary gamma survey of the railroad tracks east of Scarbrough Road and across from the Y-12 plant (see Figure 1).

The survey began at 601 Scarbrough Road on a single set of railroad tracks and continued north for approximately 50 yards. No contamination was found; however, readings on gravel on both sides of the road going into 601 Scarbrough were elevated. The gravel was made from what appears to be granite and contained elevated levels of natural radioactivity. A second area of this same type stone was found and it too was sampled with the same results. The north survey was terminated when several parked rail cars were reached.

Beginning again at 601 Scarbrough Road, the survey was conducted traveling in a southeasterly direction. At approximately 75 yards, the first anomaly was detected. The anomalies continued in "spots" for another 120 yards. A sample was taken at approximately 150 yards which had  $2100 \pm 9$  pCi/g of Cesium-137 (Cs). The surface gamma exposure rate was approximately one mR/h. The sample was taken from 0" to 2" deep and the exposure rate increased about 33% at 2 inches. Radiation levels increase with depth below the surface indicating the Cs has migrated downward to an unknown depth.

At approximately 175 yards, an abandoned railroad spur curved off to the east. This spur had had the switch and connecting rails removed. A second sample was taken on this spur. It contained  $880 \pm 6$  pCi/g of Cs and had an exposure rate of about 0.6 mR/h at the surface. In no case did the contamination extend beyond the width of a railroad car (see Figure 2).

DISCUSSION AND RECOMMENDATIONS

1. These levels of exposure/contamination do not constitute an immediate health threat, however, it does pose an environmental concern in an area easily accessible to the public.
2. This area should be the subject of an indepth evaluation to determine the areal and vertical extent of the contamination.
3. Following the evaluation, the area should be considered for possible remedial action.

#52

4. Y-12 management and the Department of Energy - Oak Ridge Operations should be notified of the findings.

*R. D. Foley*

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RDF:sh

cc: B. A. Berven  
R. O. Chester  
S. V. Kaye

msb, 1/29/93

OAK RIDGE Y-12 PLANT INFORMATION CONTROL FORM

DOCUMENT DESCRIPTION (Completed By Requesting Division)

Document No. MS/Chr-300659/K-25 Author's Telephone No. 6-8475 Acct. No. 61250000 Date of Request 1/29/93

Unclassified Title: Cesium-137 Contamination

Author(s) (Suzanne Sandberg)

TYPE:  Formal Report  Informal Report  Progress/Status Report  Co-Op Report  Thesis/Term Paper  
 Oral Presentation (identify meeting, sponsor, location, date): \_\_\_\_\_  
 Journal Article (Identify Journal): \_\_\_\_\_  
 Other (Specify): \_\_\_\_\_

Document will be published in proceedings  No  Yes  
Document will be distributed at meeting  No  Yes  
Document has patent or invention significance  No  Yes (Identify) \_\_\_\_\_  
Document has been previously released  No  Yes (Reference) \_\_\_\_\_

DIVISION REVIEW AND APPROVAL (Completed By Requesting Division)

<p>TECHNICAL CLASSIFICATION REVIEW (Divisional Classification Representative)</p> <p>Title(s): <u>Unclassified</u> Abstract: <u>NA</u></p> <p>DOCUMENT: Level <u>Unclassified</u> Category <u>NA</u></p> <p><u>Sara H. Welch</u> <u>1/29/93</u> Signature Date</p>	<p>DOCUMENT REQUEST APPROVED (Division or Department)</p> <p>_____ Signature Date</p> <p>_____ Signature Date</p>
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<p>Date Received <u>1-29-93</u> Date Initiated <u>1-29-93</u></p> <p><input checked="" type="checkbox"/> CLASSIFICATIONS:</p> <p>Title(s): <u>U</u> Abstract <u>-</u></p> <p>DOCUMENT:</p> <p>Level <u>U</u> Category <u>-</u></p> <p>Weapons Data <u>-</u> Sigma <u>-</u></p> <p><u>ASmurray</u> <u>2-2-93</u> Y-12 Classification Office Date</p>	<p><input type="checkbox"/> Editor _____ Date _____</p> <p><input checked="" type="checkbox"/> <u>Waived/msb</u> Patent Office _____ Date _____</p> <p><input type="checkbox"/> Other _____ Date _____</p> <p><input type="checkbox"/> Other _____ Date _____</p>
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ChemRisk Document Request Transmittal Form

(This section to be completed by ChemRisk)

Name S. Sandberg Division ISD is requested to provide the following document

Address \_\_\_\_\_

Date of Request 12/10 Expected receipt of document 12/21

Title of requested document Cesium-137 Contamination

Document Number 300659

Access Number of Document \_\_\_\_\_ Date of Document June 26, 1986

(This section to be completed by Derivative Classifier)

Derivative Classifier Sara H. Welch Phone 4-7864

Date document transmitted to Dr. Quist \_\_\_\_\_

Date release received from Dr. Quist \_\_\_\_\_

PUBLIC RELEASE STAMP attached to each copy of document ( YES NO )

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Signature: \_\_\_\_\_ Date \_\_\_\_\_

## DOCUMENT DESCRIPTION (to be completed by requester)

Document number UNNUMBERED/300359 Pages 2

Document title CESIUM-137 CONTAMINATION

Author(s) (indicate other divisions or organizations, if applicable) RD FOLEY

Document type (See Doc. Prep. Guide, Chs. 1 and 2, for definitions of document types):

- Formal Report     Progress Report     Informal R&D Report     Abstract     Drawing  
 Administrative     Correspondence     Internal Technical Data     Photo     Other Visuals

Journal Article (identify journal): \_\_\_\_\_

Oral Presentation (identify meeting, sponsor, location, date): \_\_\_\_\_

Will oral presentation be published in program, booklet, brochure, etc.?  Yes     No     Not Known

Will copies of the oral presentation be distributed  before,     after,     during the meeting?     No distribution will be made.

Other (specify): \_\_\_\_\_

Purpose of release HEALTH STUDY FEASIBILITY PROJECT

Previously cleared documents containing similar information \_\_\_\_\_

Is copyrighted material contained in this document? (If present, attach release.)  Yes     No

Remarks \_\_\_\_\_

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No     Yes    Within the Department of Energy?  No     Yes

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